Add the following new claims 46-51.

46. (New) The method of claim 22, wherein said probe is derived from a cell having only one parental copy of an X chromosome or only one parental copy of a Y chromosome.

47. (New) The method of claim 22, wherein said probe is derived from a cell having only one parental copy of an X chromosome and only one parental copy of a Y chromosome.

48. (New) The method of claim 22, wherein said probe is derived from a hemizygous cell.

49. (New) The method of claim 22, wherein said sex chromosome is from a human.

50. (New) The method of claim 22, wherein said test nucleic acid sample is from a human.

51. (New) A method for analyzing a test nucleic acid sample to determine whether it contains a sequence variance, said method comprising the steps of:

(a) obtaining a nucleic acid probe from a somatic cell hybrid, said probe being complementary to a chromosome or segment thereof, wherein only one allele of said chromosome or segment thereof is present in said somatic cell hybrid, and wherein said somatic cell hybrid is formed from the fusion of a cell or chromosome to a recipient cell;

(b) forming a duplex between said test nucleic acid sample and said probe; and

(c) analyzing whether said duplex contains a nucleotide mismatch, thereby